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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/911,850	07/25/2001	Ikuo Aoki	1293.1228	3894

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EXAMINER

ORTIZ CRIADO, JORGE L

ART UNIT	PAPER NUMBER
2655	7

DATE MAILED: 03/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/911,850

Applicant(s)

AOKI, IKUO

Examiner

Jorge L Ortiz-Criado

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 December 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

1. Claims 11-14 and 18-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuriuzawa et al. U.S. Patent No. 6,385,144 in view of Maeda U.S. Patent No. 6,028,828.

Regarding claim 11, Kuriuzawa et al. discloses an optical disc, comprising:
a plurality of tracks formed in a spiral direction of the optical disc, each track having at least a groove portion (See col. 1, lines 6-11; col. 2, lines 41-62; Fig. 2); and
a plurality of zones, each zone including a predetermined number of the plurality of tracks (See col. 1, lines 6-11; col. 2, lines 41-62; Fig. 2),

Kuriuzawa et al. fails to disclose wherein the optical disc is formatted to include zone addresses for each zone by formatting a portion of the corresponding zone track grooves, in each zone, to include a wobble pattern based on a predetermined modulation.

However this feature is well known in the art as evidenced by Maeda, which discloses having a disk divided into a plurality of zones forming track grooves formed in a spiral direction of the disc wherein the optical disc is formatted to include zone addresses for each zone by formatting a portion of the corresponding zone track grooves, in each zone, to include a wobble

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pattern based on a predetermined modulation (See col. 3, lines 39-51; col. 8, lines 63-64; Figs. 6,7,8),

Therefore it would have been obvious to one with ordinary skill in the art at the time of the invention to format formatted to include zone addresses for each zone by formatting a portion of the corresponding zone track grooves, in each zone, to include a wobble pattern based on a predetermined modulation, in order to prevent cross-talk at the boundaries between neighboring zones as suggested by Maeda

Regarding claim 12, The combination of Kuriuzawa et al. with Maeda as modified above would show wherein each track further includes a land portion. (See Maeda col. 10, lines 43-67; Fig. 14)

Regarding claim 13, The combination of Kuriuzawa et al. with Maeda as modified above would show wherein land and groove recording and reproduction is possible, respectively, to and from more than one spiral of the optical disc (See Maeda col. 3, lines 39-51; col. 8, line 63 to col. 9 line 25; col. 10, lines 43-67; Fig. 14; col. 21, lines 8-26; Fig. 25; Figs. 6,7,8, 14,25).

Regarding claim 14, Kuriuzawa et al. further discloses wherein the optical disc is a DVD-RAM disc (See col. 5, lines 54-60; Fig. 2).

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Regarding claim 18, The combination of Kuriuzawa et al. with Maeda as modified above would show wherein the predetermined modulation rule is one of an FM modulation, an AM modulation, and a PM modulation (See Maeda col. 9, lines 9-25; Fig. 8).

Regarding claim 19, Kuriuzawa et al. further discloses wherein the predetermined number of the plurality of tracks for each zone is based upon the data recording capacity needed for each zone plus an arbitrary recording capacity (See col. 2, lines 41-62; Fig. 2).

Regarding claim 21, The combination of Kuriuzawa et al. with Maeda as modified above would show wherein each zone has a plurality of sectors (See Maeda col. 3, lines 39-51; col. 8, line 63 to col. 9 line 30; Figs. 6,7,8,9).

Regarding claim 22, The combination of Kuriuzawa et al. with Maeda as modified above would show wherein each of the plurality of sectors has a sector address portion to store a corresponding sector address (See Maeda col. 3, lines 39-51; col. 8, line 63 to col. 9, line 30; Figs. 6,7,8,9)

Regarding claim 23, Kuriuzawa et al. discloses a method of recording data on an optical disc, comprising:

dividing the optical disc into a plurality of zones (See col. 1, lines 6-11; col. 2, lines 41-62; Fig. 2) and

recording user data in a user data portion of the zone (See col. 2, lines 41-62; Fig. 2).

Kuriuzawa et al. fails to disclose formatting a zone address portion of one of the zones to include a wobble pattern based on a predetermined modulation rule and corresponding to an address of the zone.

However this feature is well known in the art as evidenced by Maeda, which discloses having a disk divided into a plurality of zones forming track grooves formed in a spiral direction of the disc formatting a zone address portion of one of the zones to include a wobble pattern based on a predetermined modulation rule and corresponding to an address of the zone (See col. 3, lines 39-51; col. 8, line 63 to col. 9 line 25; Figs. 6,7,8);

Therefore it would have been obvious to one with ordinary skill in the art at the time of the invention to format formatting a zone address portion of one of the zones to include a wobble pattern based on a predetermined modulation rule and corresponding to an address of the zone in order to prevent cross-talk between zones at the boundaries between neighboring zones as suggested by Maeda.

2. Claims 1, 3-10, 15-17, and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuriuzawa et al. U.S. Patent No. 6,385,144 in combination with Maeda U.S. Patent No. 6,028,828as and further in view of Fukushima et al. U.S. Patent No. 5,138,599.

Regarding claim 1, Kuriuzawa et al. discloses an optical disc, comprising:
track grooves formed in a radial direction of the disc, with the disc being divided into a plurality of zones (See col. 2, lines 41-62; Fig. 2),

wherein each zone has a recording capacity in which an arbitrary recording capacity is added to a data recording capacity needed for each divided zone (See col. 2, lines 41-62; Fig. 2).

Kuriuzawa et al. fails to disclose wherein the track grooves are formatted into a waved pattern in the radial direction of the disc, overlapped over recorded user data, to record zone address information for each of the divided zones based on a predetermined modulation rule.

However this feature is well known in the art as evidenced by Maeda, which discloses having a disk divided into a plurality of zones forming track grooves formed in a radial direction of the disc wherein the track grooves are formatted into a waved pattern in the radial direction of the disc, overlapped over recorded user data, to record zone address information for each of the divided zones based on a predetermined modulation rule (See col. 3, lines 39-44; col. 8, line 63- to col. 9, line 25; col. 10, lines 36-42; Figs. 6,7,8,14),

Therefore it would have been obvious to one with ordinary skill in the art at the time of the invention to format the track grooves into a waved pattern in the radial direction of the disc, in order to prevent cross-talk between zones at the boundaries as suggested by Maeda.

The combination of Kuriuzawa et al. with Maeda as modified above further teaches an arbitrary area at an inner and/or outer circumferences in each zone separate from a user data recording area (See Kuriuzawa et al. col. 2, lines 43-62), but fails to disclose wherein an arbitrary area at an inner and/or outer circumferences in each zone has a coupling area

However this feature is well known in the art as evidenced by Fukushima et al., which discloses an optical disc with a plurality of zones and a coupling area separate from a user data recording area (See col. 2, lines 3-17; col. 4, line 39-58, col. 4, line 59 -60; Fig. 1)

Therefore it would have been obvious to one with ordinary skill in the art at the time of the invention to provide an arbitrary area at an inner and/or outer circumferences in each zone with a coupling area separate from a user data recording area in order to avoid erroneous reproduction due to cross-talk between neighbors track at the boundaries of the zones as suggested by Fukushima et al.

Regarding claim 3, The combination of Kuriuzawa et al. with Maeda and further in view of Fukushima et al. as modified above would show wherein the coupling area has a predetermined pattern (See Fukushima et al., col. 5, lines 32-61)

Regarding claim 4, The combination of Kuriuzawa et al. with Maeda and further in view of Fukushima et al. as modified above would show wherein, during recording of the user data, in each zone an arbitrary zone start pattern and/or zone end pattern is additionally recorded (See Fukushima et al., col. 4, line 61 to col. 5, line 31; Fig. 3).

Regarding claim 5, The combination of Kuriuzawa et al. with Maeda and further in view of Fukushima et al. as modified above would show wherein, during recording of the user data, in each zone an arbitrary zone start pattern and/or zone end pattern is additionally recorded (See Fukushima et al. col. 4, line 61 to col. 5, line 31; Fig. 3)

Regarding claim 6, The combination of Kuriuzawa et al. with Maeda and further in view of Fukushima et al. as modified above would show wherein, when data is recorded or reproduced

at both sides of a land portion and a groove portion formed by one of the track grooves (See Maeda col. 10, lines 43-67; Fig. 14),

a sequence in recording or reproduction of data in each zone is performed according to a following sequence: after recording or reproduction at a groove portion in each zone is completed, recording or reproduction at the land portion is performed (See Maeda col. 21, lines 8-26; Fig. 25).

Regarding claim 7, The combination of Kuriuzawa et al. with Maeda and further in view of Fukushima et al. as modified above would show wherein, when data is recorded or reproduced at both sides of a land portion and a groove portion formed by one of the track grooves, a sequence in recording or reproduction of data in each zone is performed according to a following sequence: after recording or reproduction at a land portion in each zone is completed, recording or reproduction at the groove portion is performed (See Maeda col. 21, lines 8-26; Fig. 25)

Regarding claim 8, The combination of Kuriuzawa et al. with Maeda and further in view of Fukushima et al. as modified above would show wherein the optical disc is a DVD-RAM disc (See Kuriuzawa et al. col. 5, lines 54-60; Fig. 2)

Regarding claim 9, The combination of Kuriuzawa et al. with Maeda and further in view of Fukushima et al. as modified above would show wherein each zone has a plurality of sectors (See Maeda col. 3, lines 39-51; col. 8, line 63 to col. 9 line 30; Figs. 6,7,8,9).

Regarding claim 10, The combination of Kuriuzawa et al. with Maeda and further in view of Fukushima et al. as modified above would show wherein each of the plurality of sectors has a sector address portion to store a corresponding sector address (See Maeda col. 3, lines 39-51; col. 8, line 63 to col. 9, line 30; Figs. 6,7,8,9)

Regarding claim 15, Kuriuzawa et al. in combination with Maeda discloses all the limitations based on claim 11, as outlined above. The combination of Kuriuzawa et al. with Maeda as modified above further teaches wherein each zone further includes an arbitrary area, separate from a user data recording area of a corresponding zone, with the arbitrary area at an inner and/or outer circumference of the corresponding zone. (See Kuriuzawa et al. col. 2, lines 43-62), but fails to disclose wherein an arbitrary area at an inner and/or outer circumferences in each zone has a coupling area.

However this feature is well known in the art as evidenced by Fukushima et al., which discloses an optical disc with a plurality of zones and a coupling area separate from a user data recording area (See col. 2, lines 3-17; col. 4, line 39-58, col. 4, line 59 –60; Fig. 1)

Therefore it would have been obvious to one with ordinary skill in the art at the time of the invention to provide an arbitrary area at an inner and/or outer circumferences in each zone with a coupling area separate from a user data recording area in order to avoid erroneous reproduction due to cross-talk between neighbors track at the boundaries of the zones as suggested by Fukushima et al.

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Regarding claim 16, The combination of Kuriuzawa et al. with Maeda and further in view of Fukushima et al. as modified above would show wherein a predetermined pattern is recorded in the coupling area, with the pattern being based on a recording or reproduction system to perform recording or reproduction, respectively, to or from the optical disc (See Fukushima et al., col. 2, lines 3-17; col. 4, line 39-58, col. 4, line 59 –60; Fig. 1)

Regarding claim 17, Kuriuzawa et al. in combination with Maeda discloses all the limitations based on claim 11, as outlined above. The combination of Kuriuzawa et al. with Maeda as modified above further teaches an arbitrary zone at an inner and/or outer circumferences in each zone (See Kuriuzawa et al. col. 2, lines 43-62), but fails to disclose wherein, during recording of the user data, in each zone an arbitrary zone start pattern and/or zone end pattern is additionally recorded.

However this feature is well known in the art as evidenced by Fukushima et al., which discloses an optical disc with a plurality of zones and a coupling area separate from a user data recording area (See col. 4, line 61 to col. 5, line 31; Fig. 3).

Therefore it would have been obvious to one with ordinary skill in the art at the time of the invention to provide an arbitrary zone start pattern and/or zone end pattern in order to avoid erroneous reproduction due to cross-talk between adjacent zones as suggested by Fukushima et al.

Regarding claim 24, Kuriuzawa et al. in combination with Maeda discloses all the limitations based on the method claim 23, as outlined above. The combination of Kuriuzawa et

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al. with Maeda as modified above further teaches wherein each zone further includes an arbitrary area, separate from a user data recording area, with the arbitrary area at an inner and/or outer circumference. (See Kuriuzawa et al. col. 2, lines 43-62), but fails to disclose a recording a predetermined pattern in an additional coupling portion of the zone, after the recording of user data.

However this feature is well known in the art as evidenced by Fukushima et al., which discloses an optical disc with a plurality of zones and a predetermined pattern in an additional coupling portion of the zone, after the recording of user data (See col. 2, lines 3-17; col. 4, line 39-58, col. 4, line 59-60; Fig. 1)

Therefore it would have been obvious to one with ordinary skill in the art at the time of the invention to provide an arbitrary area at an inner and/or outer circumferences in each zone with a predetermined pattern in the coupling area separate from a user data recording area in order to avoid erroneous reproduction due to cross-talk between neighbors track at the boundaries of the zones as suggested by Fukushima et al.

Regarding claim 25, Kuriuzawa et al. in combination with Maeda discloses all the limitations based on the method claim 23, as outlined above. The combination of Kuriuzawa et al. with Maeda as modified above further teaches an arbitrary zone at an inner and/or outer circumferences in each zone (See Kuriuzawa et al. col. 2, lines 43-62), but fails to disclose wherein the recording of user data includes recording of a zone start position, then recording of the user data, then a recording of a zone end position.

However this feature is well known in the art as evidenced by Fukushima et al., which discloses an optical disc with a plurality of zones and recording of a zone start position, then recording of the user data, then a recording of a zone end position. (See col. 4, line 61 to col. 5, line 31; Fig. 3).

Therefore it would have been obvious to one with ordinary skill in the art at the time of the invention to provide an arbitrary zone start position, then recording of the user data, then a recording of a zone end position in order to avoid erroneous reproduction due to cross-talk as suggested by Fukushima et al.

Response to Arguments

3. Applicant's arguments filed 12/22/2003 have been fully considered but they are not persuasive.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In this case, Kuriuzawa et al. teaches the use of a recording capacity in which an arbitrary boundary recording capacity is added to a data recording capacity needed for each divided zone

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in order to avoid cross-talk caused by the ID information in header areas between boundary zones.

However, by adding the arbitrary boundary recording capacity to each divided zone recording capacity of the disk is reduced.

Maeda acknowledge the deficiency of reduction in capacity due to this arbitrary boundary recording capacity to each zone in combination with the ID information provided in the header areas.

Maeda teaches that without the arbitrary boundary recording capacity, cross-talk between boundary zones may occur due to ID information.

However, Maeda a discloses an optical disc divided into a plurality of zones forming track grooves formed in a radial direction of the disc wherein the track grooves are formatted into a waved pattern in the radial direction of the disc, overlapped over recorded user data, to record zone address information for each of the divided zones based on a predetermined modulation rule, eliminating the use of the ID information, by formatting the track grooves and or lands into a waved pattern in the radial direction providing address information and boundary information in the predetermined modulation pattern.

Maeda teaches increasing the capacity of the disk and preventing cross-talk by eliminating the ID information and/or boundary zones of two neighboring zones on the disk can be used for recording information allowing for the use of this arbitrary boundary recording capacity

Therefore it would have been obvious to one with ordinary skill in the art at the time of the invention to format formatted to include zone addresses for each zone by formatting a portion

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of the corresponding zone track grooves, in each zone, to include a wobble pattern based on a predetermined modulation, in order to eliminating the use of the ID information to increase the recording capacity, improving data accessing speed and/or prevent cross-talk at the boundaries between neighboring zones as suggested by Maeda.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

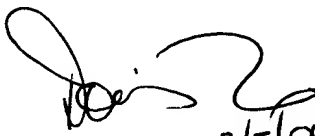
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jorge L Ortiz-Criado whose telephone number is (703) 305-8323. The examiner can normally be reached on Mon.-Thu.(8:30 am - 6:00 pm), Alternate Fridays off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris H To can be reached on (703) 305-4827. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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